

ISOPROPYL ALCOHOL Product Stewardship Summary

CAS number

67-63-0

Chemical formula

C₃H₈O

What is isopropyl alcohol?

Isopropyl alcohol (IPA) – also known as 2-propanol or isopropanol – is produced by the hydration of propylene. It is a water-white mobile liquid with a mild alcohol odour.

How is isopropyl alcohol used?

Isopropyl alcohol is miscible in all proportions with water and many organic liquids and has good solvent power for many organic substances (gums shellac, alkaloids, and essential oils). IPA forms azeotropic mixtures with water and many organic liquids. Although IPA itself is not a solvent for nitrocellulose, in combination with a true solvent, it increases that solvent's dissolving power for nitrocellulose. Isopropyl alcohol is also available in GMP and USP grades for use in pharmaceutical applications.

Health, Safety and Environmental considerations

IPA is highly flammable and flammable atmospheres can be created at temperatures as low as 12°C. This means that any environment where IPA is being used needs to be well ventilated. As the vapour is heavier than air, it may spread along the ground, so care needs to be taken that the vapour is not ignited by a distant source.

IPA is of low toxicity. The vapours may cause irritation of the respiratory tract, nose, and eyes. If IPA comes into contact with the skin, it may cause dryness. None of these effects is long lasting.

Generally, humans respond to IPA in much the same way as ethanol (the chemical name for conventional, sugar-based alcohols such as wine and beer). The body's biological processes deal effectively with IPA. In repeat dose animal studies, IPA has been shown not to cause cancer or affect male or female fertility.

The American Conference of Governmental Industrial Hygienists (ACGIH) has assigned an eight-hour occupational exposure limit of 200 part per million (200 ppm). Exposure at levels above these limits might cause dizziness, nausea and headaches.

IPA has low toxicity to aquatic organisms. It is biodegradable and has a low potential to bioaccumulate.

Storing and transporting isopropyl alcohol

IPA is transported by marine vessels, road tankers, and railcars. During transportation, product is stored in bulk containers that meet local and international regulated specifications.

Risk Characterization Summary

Risks associated with exposure to this product have been evaluated for the following “chain-of-commerce” activities: manufacture, storage, product transfer, transportation, and customers/markets. It is manufactured, stored and transported to customers in closed systems. Depending on the customer, end uses may vary from use as an intermediate for the manufacture other chemicals, commercial products, or certain formulated consumer products. Proper equipment design and handling procedures maintain low risk from exposure to product where the product is used as a chemical intermediate. Exposures may be higher in commercial and consumer applications. To minimize risk, additional controls, such as, special handling procedures and protective packaging, are implemented.

This product stewardship summary is intended to give general information about the chemical or categories of chemicals addressed. It is not intended to provide an in-depth discussion of health and safety information. Additional information is available through the chemical’s applicable Material Safety Data Sheet, which should be consulted before use of the chemical. This product stewardship summary does not supplant or replace required regulatory and/or legal communication documents.